ARGONNE LEADERSHIP COMPUTING FACILITY
SEMINAR ANNOUNCEMENT

April 24, 2009 (Friday)
10:30 am / Building 221 / Conference Room A216

"Scheduling and Synchronization for Multiprocessors"

Presented By

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Abstract

Traditionally, due to its complexity, parallel programming has been an exclusive domain of expert programmers. However, as parallel computers become more common, and as the number of processors in these computers increases, we are under enormous pressure to create platforms that enable programmers to write scalable, portable and efficient parallel programs easily. Developing correct and efficient parallel programs is difficult since the programmers often have to manage low-level details like scheduling and synchronization explicitly.

Recent advances in parallel programming abstractions, like dynamic multithreading, stream programming and transactional memory allow the programmers to specify their programs in a high-level manner without worrying about the low-level scheduling and synchronization details. These new abstractions place a heavier burden on the system, since the system is responsible for efficient and correct scheduling and synchronization of programs. This talk will present work on provably good schedulers and transactional memory system designs.